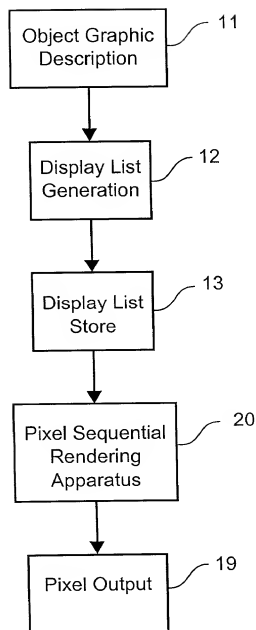
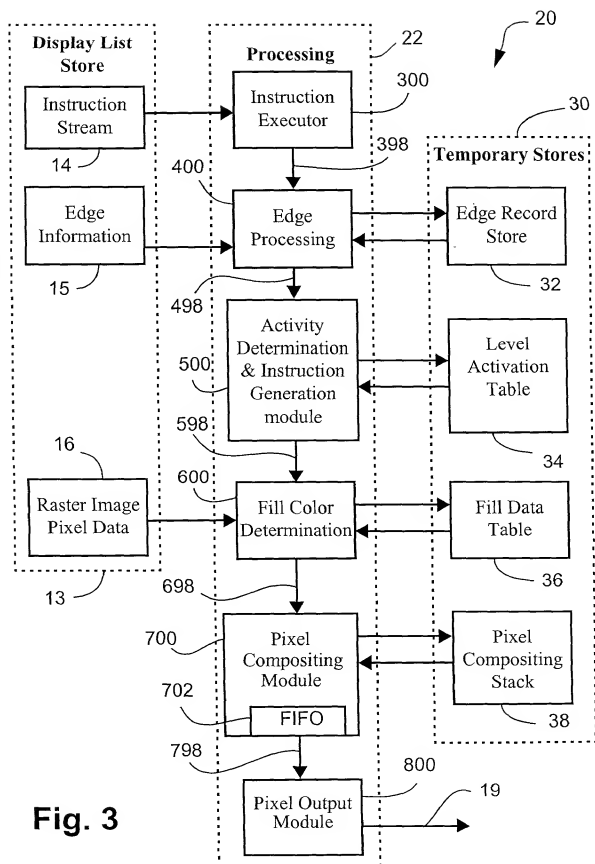


Fig. 1

**Fig. 2**



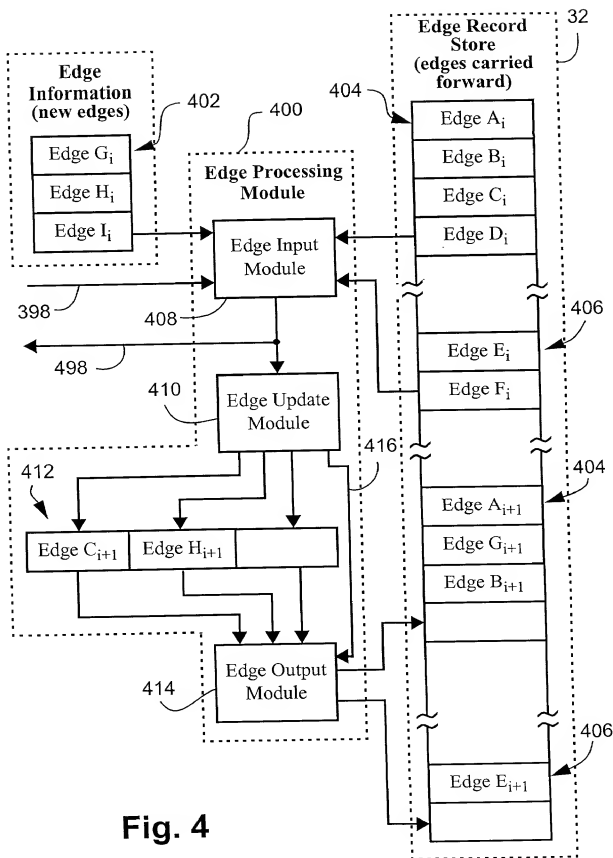
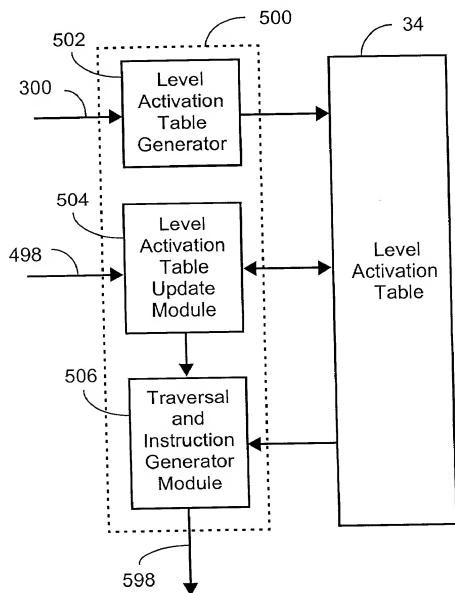
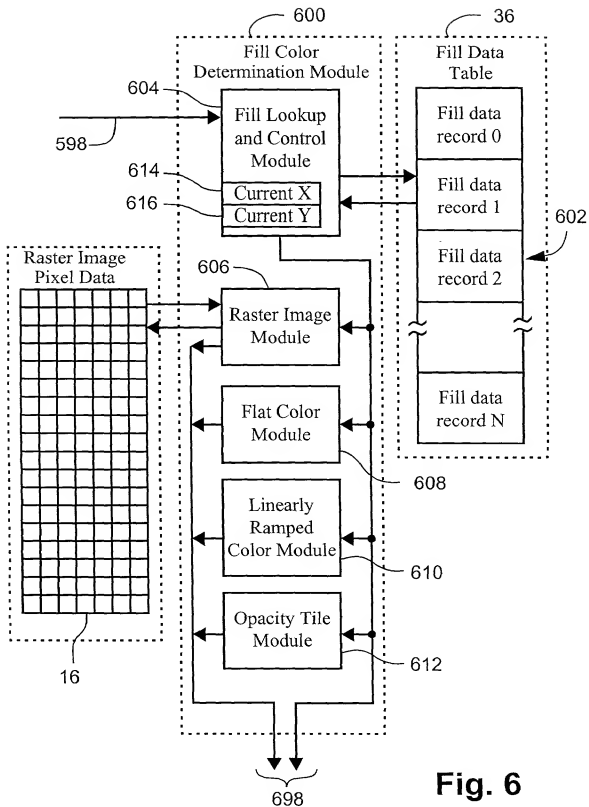
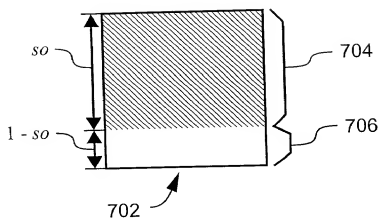
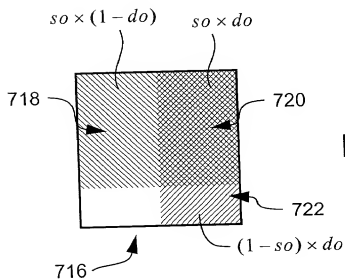
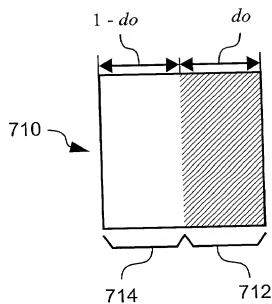
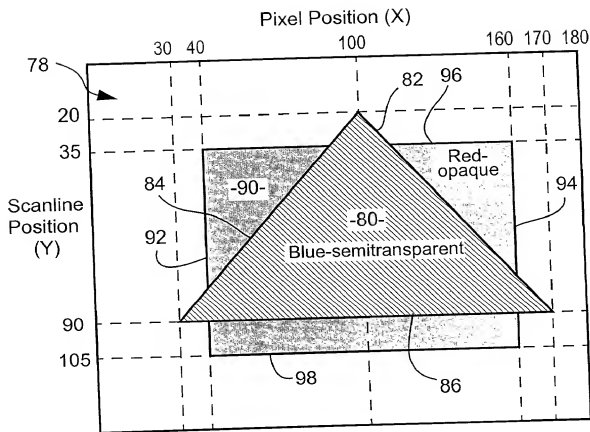
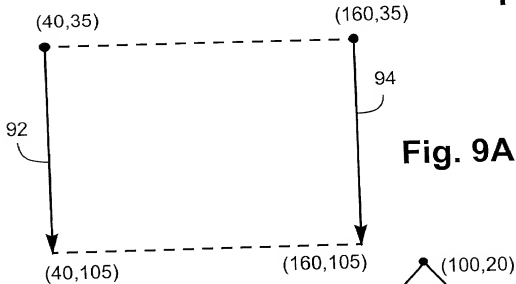
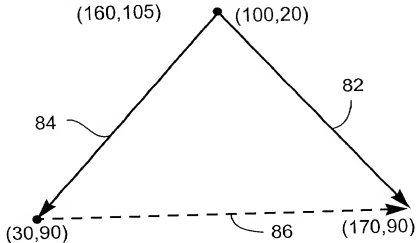


Fig. 4

**Fig. 5**



**Fig. 7A****Fig. 7B****Fig. 7C**

**Fig. 8****Fig. 9A****Fig. 9B**

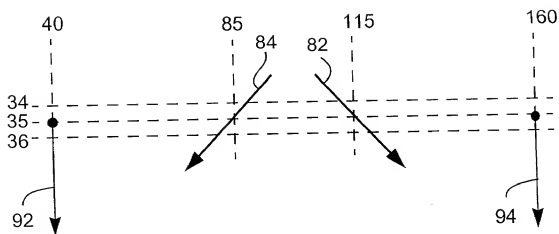


Fig. 10

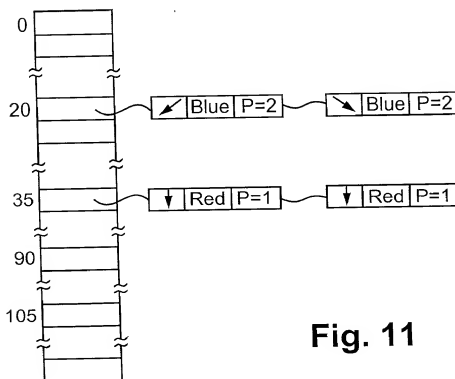
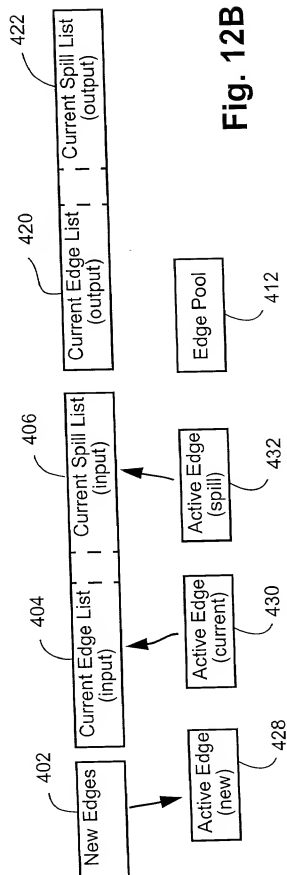
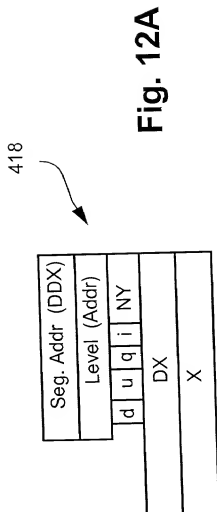
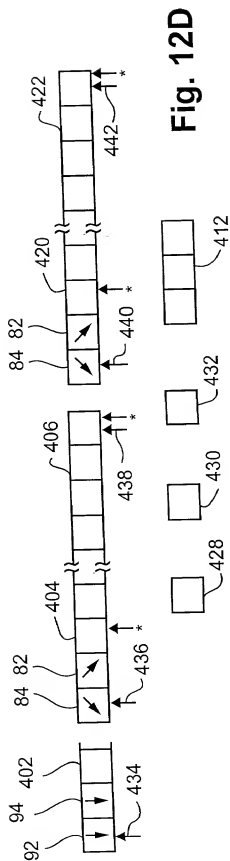
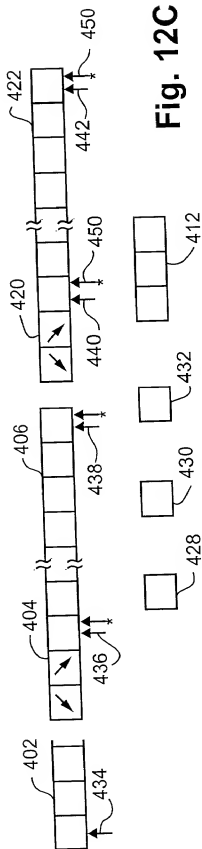


Fig. 11





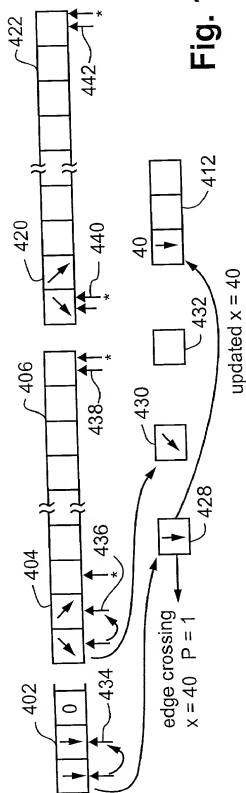


Fig. 12E

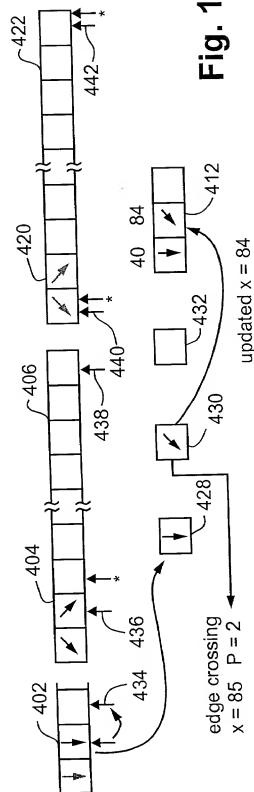
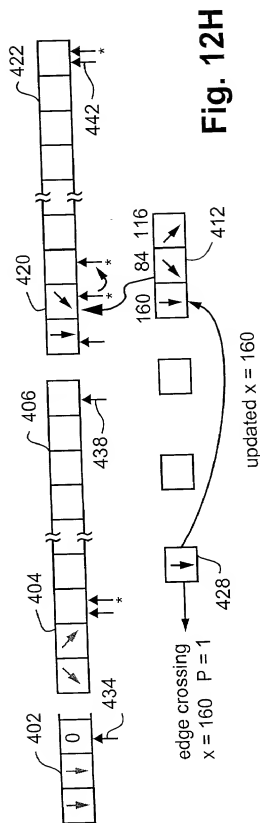
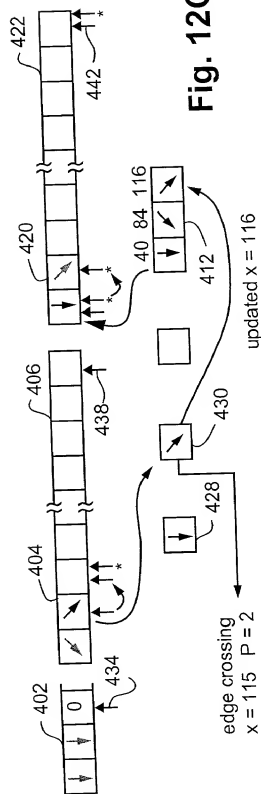


Fig. 12F



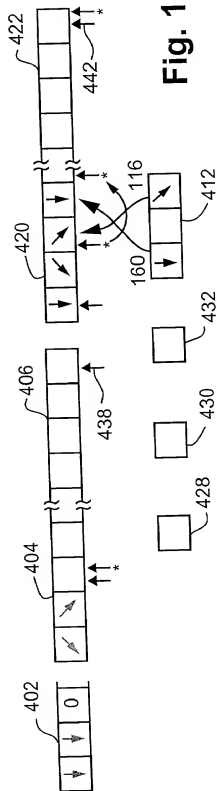


Fig. 12I

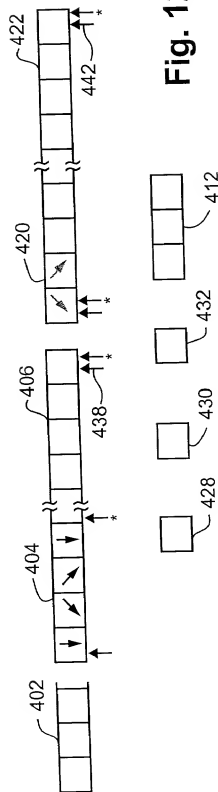
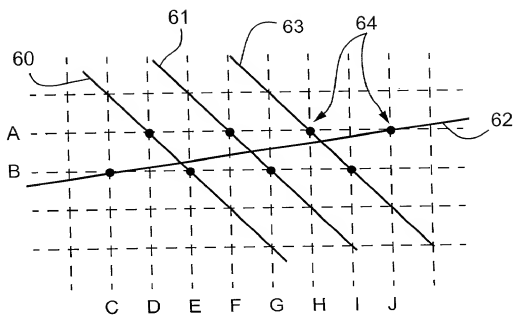
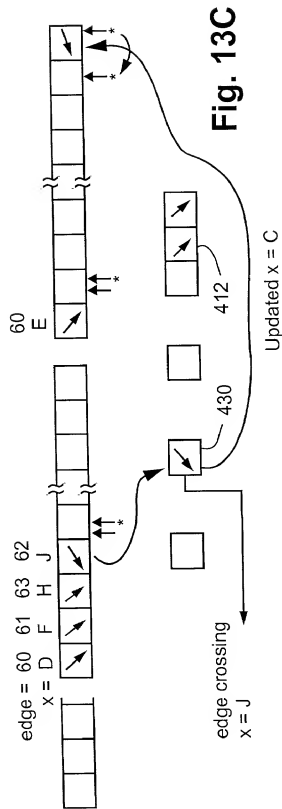
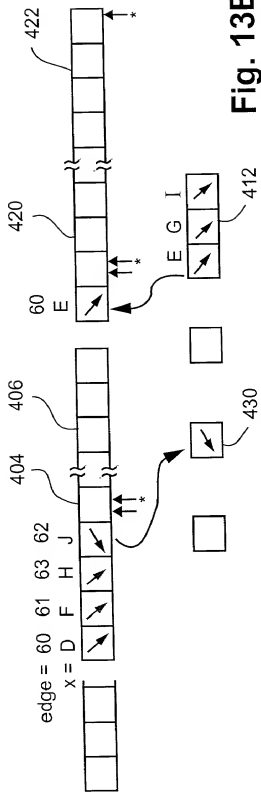
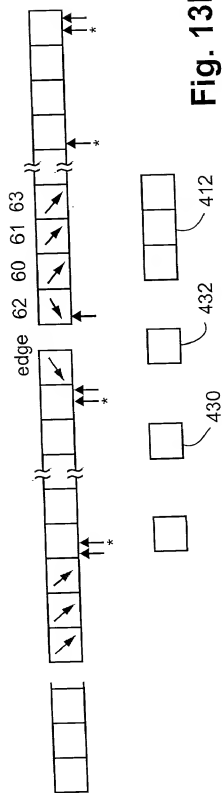
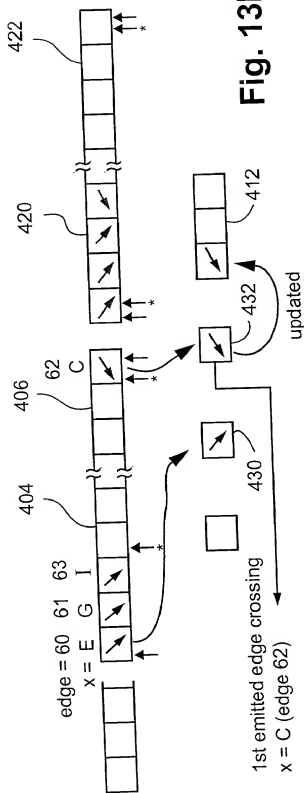


Fig. 12J

**Fig. 13A**





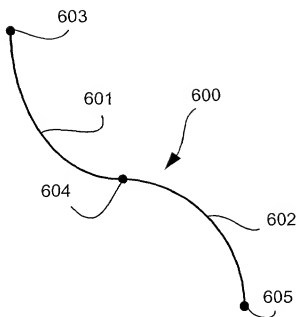


Fig. 14A
(Prior Art)

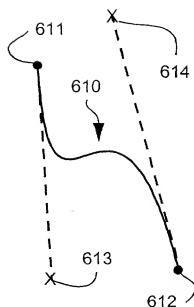


Fig. 14B
(Prior Art)

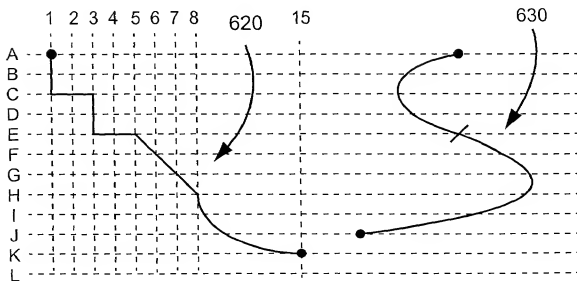


Fig. 14C

Fig. 14D

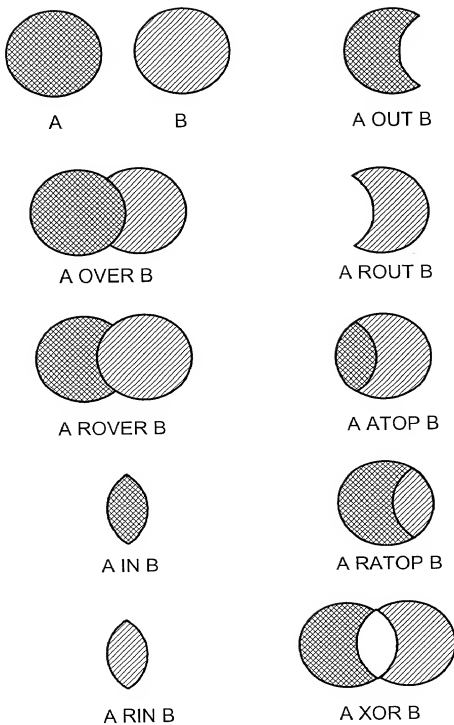


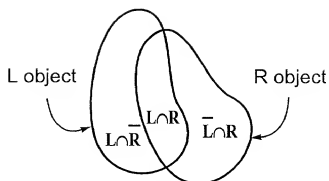
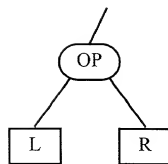
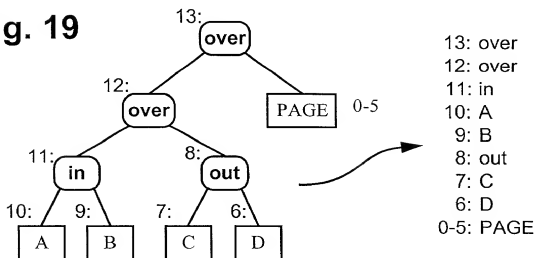
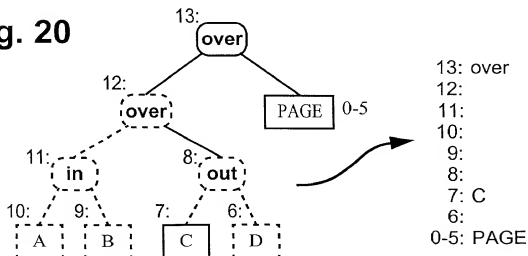
Fig. 15

| Edge 84 | Edge 92 |
|---------------------------------------|---------------------------------------|
| X = 100 | X = 40 |
| NY = 70 | NY = 70 |
| DX = 1 | DX = 0 |
| DDX = 0 | DDX = 0 |
| P = 1 | P = 0 |
| DIR = (-) | DIR = (+) |
| ADD = (irrelevant in this example) | ADD = (irrelevant in this example) |

Fig. 16

| Raster operation code | Operation | Comment |
|-----------------------|--|-------------|
| 0x00 | $r = 0$ | BLACKNESS |
| 0x01 | $r = \text{src} \ \& \ \text{dest}$ | SRCAND |
| 0x02 | $r = \text{src} \ \& \ \sim \text{dest}$ | SRCERASE |
| 0x03 | $r = \text{src}$ | SRCCOPY |
| 0x04 | $r = \sim \text{src} \ \& \ \text{dest}$ | |
| 0x05 | $r = \text{dest}$ | NOP |
| 0x06 | $r = \text{src} \wedge \text{dest}$ | SRCINVERT |
| 0x07 | $r = \text{src} \mid \text{dest}$ | SRCPAINT |
| 0x08 | $r = \sim(\text{src} \mid \text{dest})$ | NOTSRCERASE |
| 0x09 | $r = \sim(\text{src} \wedge \text{dest})$ | |
| 0x0a | $r = \sim \text{dest}$ | DSTINVERT |
| 0x0b | $r = \text{src} \mid \sim \text{dest}$ | |
| 0x0c | $r = \sim \text{src}$ | NOTSRCCOPY |
| 0x0d | $r = \sim \text{src} \mid \text{dest}$ | MERGEPAINT |
| 0x0e | $r = \sim(\text{src} \ \& \ \text{dest})$ | |
| 0x0f | $r = 0\text{xff}$ | WHITENESS |
| 0x10 | $r = \min(\text{src}, \text{dest})$ | |
| 0x11 | $r = \max(\text{src}, \text{dest})$ | |
| 0x12 | $r = \text{clamp}(\text{src} + \text{dest})$ | |
| 0x13 | $r = \text{src}$ | |
| 0x14 | $r = \text{clamp}(\text{src} - \text{dest})$ | |
| 0x15 | $r = \text{dest}$ | |
| 0x16 | $r = \text{clamp}(\text{dest} - \text{src})$ | |
| 0x17 | $r = \text{clamp}(\text{src} + \text{dest})$ where dest is signed | |
| 0x18 | $r = \text{threshold}(\text{dest}, \text{src})$ | |
| 0x19 | $r = \text{threshold}(\text{src}, \text{dest})$ | |
| 0x1a | $r = \sim \text{dest}$ | |
| 0x1b | $o = \text{luminance}(\text{dest}, \text{src})$ | |
| 0x1c | $r = \sim \text{src}$ | |
| 0x1d | $o = \text{ckey}(\text{dest}; \text{src} \ +/- \ o)$ | |

Fig. 17

**Fig. 18A****Fig. 18B****Fig. 19****Fig. 20**

| Index | L Active | R Active | $\bar{L}\bar{R}$ reqd | $\bar{L}\bar{R}$ reqd | Leaf/ Operator Entry | Node Active | Parent | Node is L | Generate L | Generate R | $\bar{L}\bar{R}$ op used | R Branch Index |
|-------|-------------|-------------|--------------------------|--------------------------|----------------------------|----------------|--------|--------------|---------------|---------------|--------------------------------|----------------------|
| 13 | 0 | 1 | 1 | 1 | over | 1 | ? | 0 | 0 | 1 | 0 | 5 |
| 12 | 0 | 0 | 1 | 1 | over | 0 | 13 | 1 | 0 | 0 | 0 | 8 |
| 11 | 0 | 0 | 0 | 0 | in | 0 | 12 | 1 | 0 | 0 | 0 | 9 |
| 10 | | | | | leaf A | 0 | 11 | 1 | | | | |
| 9 | | | | | leaf B | 0 | 11 | 0 | | | | |
| 8 | 0 | 0 | 1 | 0 | out | 0 | 12 | 0 | 0 | 0 | 0 | 6 |
| 7 | | | | | leaf C | 0 | 8 | 1 | | | | |
| 6 | | | | | leaf D | 0 | 8 | 0 | | | | |
| PAGE | | | | | | | | | | | | |

Fig. 21

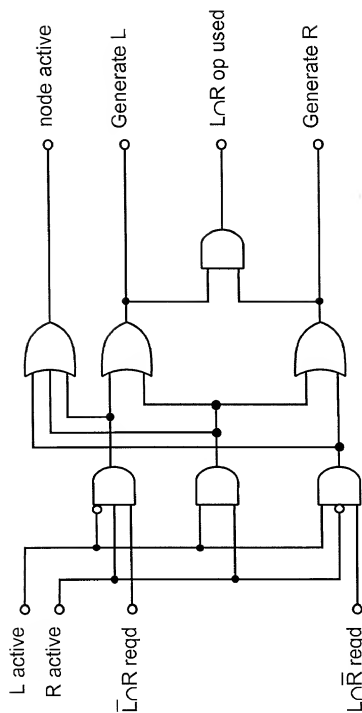


Fig. 22

| Index | L Active | R Active | $\bar{L}\bar{R}$ reqd | $\bar{L}\bar{R}$ reqd | Leaf/Operator Entry | Node Active | Parent | Node is L | Generate L | Generate R | $L\bar{R}$ op used | R Branch Index |
|-------|----------|----------|-----------------------|-----------------------|---------------------|-------------|--------|-----------|------------|------------|--------------------|----------------|
| 13 | 1 | 1 | 1 | 1 | over | 1 | ? | 0 | 1 | 1 | 1 | 5 |
| 12 | 0 | 1 | 1 | 1 | over | 1 | 13 | 1 | 0 | 1 | 0 | 8 |
| 11 | 0 | 0 | 0 | 0 | in | 0 | 12 | 1 | 0 | 0 | 0 | 9 |
| 10 | | | | | leaf A | 0 | 11 | 1 | | | | |
| 9 | | | | | leaf B | 0 | 11 | 0 | | | | |
| 8 | 1 | 0 | 1 | 0 | out | 1 | 12 | 0 | 1 | 0 | 0 | 6 |
| 7 | | | | | leaf C | 1 | 8 | 1 | | | | |
| 6 | | | | | leaf R | 0 | 8 | 0 | | | | |
| PAGE | | | | | | | | | | | | |

Fig. 23

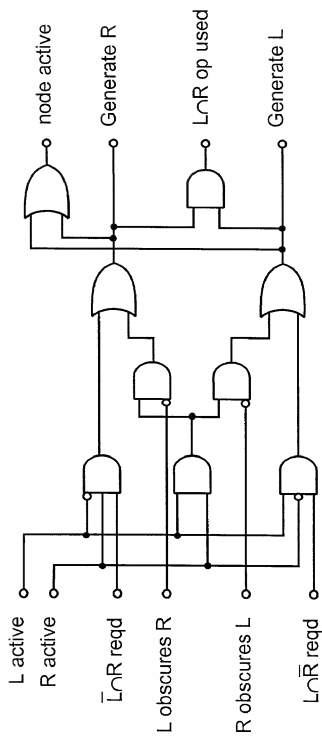


Fig. 24

| Index | L Active | R Active | $L \cap R$ reqd | $\overline{L \cap R}$ reqd | L obscures R | R obscures L | Leaf/Operator Entry | Node Active | Parent | Node is L | Gene-rate L | Gene-rate R | $L \cap R$ op used | R Branch Index |
|-------|----------|----------|-----------------|----------------------------|--------------|--------------|---------------------|-------------|--------|-----------|-------------|-------------|--------------------|----------------|
| | | | 0 | 0 | 0 | 0 | in | | | | | | | |
| | | | 0 | 0 | 1 | 0 | (CLIP IN) | | | | | | | |
| | | | 1 | 0 | 0 | 0 | out | | | | | | | |
| | | | 1 | 0 | 1 | 1 | (CLIP OUT) | | | | | | | |

Fig. 25

| | | | | | | | | | |
|------------|---|---|---|---|---|---|---|---|---|
| L | T | T | T | L | L | L | O | O | O |
| R | T | R | O | T | R | O | T | R | O |
| Generate L | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |
| Generate R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Result | T | T | T | T | L | L | T | O | O |

Fig. 26

| | | | | | | | | | |
|------------|---|---|---|---|----|---|---|---|---|
| L | T | T | T | L | L | L | O | O | O |
| R | T | R | O | T | R | O | T | R | O |
| Generate L | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |
| Generate R | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |
| Result | T | T | T | T | LR | L | T | R | O |

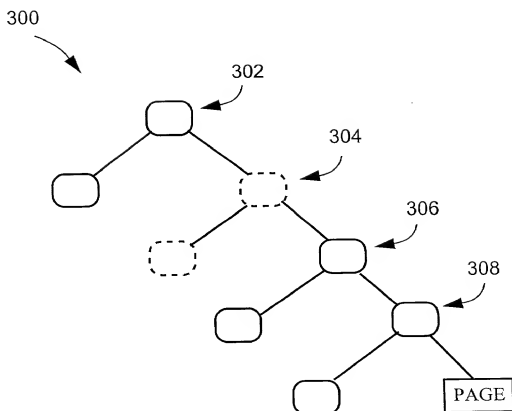
Fig. 27

| | | | | | | | | | |
|------------|---|---|---|---|----------|---|---|---------|---|
| L | T | T | T | L | L | L | O | O | O |
| R | T | R | O | T | R | O | T | R | O |
| Generate L | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Generate R | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |
| Result | T | T | T | L | $L(1-R)$ | T | O | $(1-R)$ | T |

Fig. 28

| | | | | | | | | | |
|------------|---|---|---|---|---|---|---|---|---|
| L | T | T | T | L | L | L | O | O | O |
| R | T | R | O | T | R | O | T | R | O |
| Generate L | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| Generate R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Result | T | T | T | L | T | T | O | T | T |

Fig. 29

**Fig. 30**